REMARKS

In response to the above-identified Office Action, no claims are amended, no claims are cancelled and no claims are added. Accordingly, Claims 1-31 are pending. Reconsideration and withdrawal of the rejections of record are requested in view of such amendments and the following discussion.

I.   Claim Rejections Under 35 U.S.C. §103

The Examiner has rejected Claims 1, 6-9, 14-17, 22-25 and 27 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,434,265 issued to Xiong et al. ("Xiong"). Applicant respectfully traverses this rejection.

Regarding Claims 1, 9 and 25, Claims 1, 9 and 25 analogous claim features, including the following, which are neither taught nor suggested by either Xiong or the references of record:

> purging memory, subsequent to said identifying, of the at least two digital images at the first resolution level;

> retrieving, subsequent to said purging, overlapping areas of the at least two digital images at a second resolution level higher than the first resolution level based on the first overlap information; and

> identifying second overlap information regarding where overlapping ones of the retrieved overlapping areas overlap at the second resolution level. (Emphasis added.)

According to the Examiner, the above-described features of Claims 1, 9 and 25 are taught by Xiong at col. 4, lines 54-67. Applicant respectfully disagrees with the Examiner's contention.

The cited passage referred to by the Examiner refers to a first step of registering all overlapping images projectively. As described by Xiong:

> To find a solution to the first sub-problem posed in constructing a panorama from rectilinear images, finding projective registrations of overlapping images, one must pairwise register the two images. Pairwise registration can be thought of as synonymous to finding an estimate of the projective transformation relating to given overlapping rectilinear images. (col. 10, lines 10-16.) (Emphasis added.)

As further described within Xiong:

> The objective of local pairwise registration is to estimate the projective matrix given to overlapping images. (col. 11, lines 19-20.) (Emphasis added.)

Applicant respectfully submits that detection of a projective registration of overlapping images is distinct from the above-described features of Claims 1, 9 and 25. After careful review of the entire text of Xiong, Applicant fails to find any teaching or suggestion within Xiong regarding retrieving subsequent to said purging, overlapping areas of the at least two digital images at a second resolution level higher than the first resolution level based on the first overlap information. In fact, Applicant submits that Xiong is silent as to any subsequent image retrieval. As described within Xiong:

First, regarding the initial local registration, and referring generally to the generalized flowchart of FIG. 3, the system 210 reads in each overlapping rectilinear image into main memory 220, as indicated by step 312. (col. 4, lines 54-57.)

Furthermore, Applicant submits that Xiong does not identify first or second overlap information, as recited by Claims 1, 9 and 25, but is strictly limited to:

> [C]omparing common overlapping areas between overlapping images at certain predetermined resolution levels on a Gaussian pyramid representing the overlapping images. (col. 4, lines 62-65.) (Emphasis added.)

This comparison of the overlapping image areas is necessary to estimate the projective matrix to pairwise register the rectilinear images. (*See* col. 10, lines 10-16.) Hence, Applicant respectfully submits that the teachings of Xiong, with regards to estimating the projective matrix given two overlapping images, does not teach or suggest the above-described features of Claims 1, 9 and 25. In addition, Xiong is silent on retrieving, at the second resolution level, based on the first identified overlap information, as recited by Claims 1, 9 and 25, since Xiong is limited to a single load of each overlapping rectilinear image into main memory 22. (*See* col. 4, lines 54-57.)

Furthermore, as correctly pointed out by the Examiner, Xiong fails to teach purging of memory subsequent to identifying the first overlap information. However, according to the Examiner, it would be obvious to one of ordinary skill in the art to purge memory subsequent to said identifying of the at least two digital images at the first resolution level, as recited by Claims 1, 9 and 25. Applicant respectfully disagrees with the Examiner's contention.

In fact, Applicant respectfully submits that modification of Xiong, as proposed by the Examiner, would render Xiong unsatisfactory for its intended purpose. Specifically, as described within Xiong:

> The gradient-based optimization minimizes the following objective, as suggested in box 320 in FIG. 3, by instructing the processor 212 to perturb the overlapping images stored in memory with various combinations of overlapping pixels until the below local registration error function has the smallest value. (col. 11, lines 51-56.) (Emphasis added.)

Applicant respectfully submits that purging memory would prohibit the determination of the smallest value for the local registration error function by prohibiting acquisition of different combinations of overlapping areas when such areas might be purged from memory, as recited by Claims 1, 9 and 25.

Accordingly, Applicant respectfully submits that the Examiner fails to establish a *prima facie* case of obviousness of Claims 1, 9 and 25 over Xiong, since Xiong, as modified by the Examiner, fails to teach or suggest each of the above-recited features of Claims 1, 9 and 25. Furthermore, Applicant respectfully submits that the Examiner fails to illustrate a suggestion or motivation for modifying Xiong, since the motivation suggested by the Examiner would render

Xiong unsatisfactory for its intended purpose of using different combinations of overlapping areas to determine the smallest value for the local registration function. (*See*, col. 11, lines 51-56.)

Therefore, Applicant respectfully submits that Claims 1, 9 and 25 are patentable over Xiong, as modified by the Examiner. Consequently, Applicant respectfully requests that the Examiner reconsider and withdraw the §103(a) rejection of Claims 1, 9 and 25.

Regarding Claims 6-8, Claims 6-8 depend from Claim 1 and therefore include the patentable claim features of Claim 1, as described above. Accordingly, Claims 6-8, based on their dependency from Claim 1, are also patentable over Xiong, as modified by the Examiner. Consequently, Applicant respectfully requests that the Examiner reconsider and withdraw the §103(a) rejection of Claims 6-8.

Regarding Claims 14-16, Claims 14-16 depend from Claim 9 and therefore include the patentable claim features of Claim 9, as described above. Accordingly, Claims 14-16, based on their dependency from Claim 9, are also patentable over Xiong, as well as the references of record. Consequently, Applicant respectfully requests that the Examiner reconsider and withdraw the §103(a) rejection of Claims 14-16.

Regarding Claim 17, Claim 17 includes analogous claim features, as described above, with reference to Claims 1, 9 and 25. Specifically, Applicant respectfully submits that the purging of memory, as recited by Claim 17, is taught away from Xiong, since such purging of memory would render Xiong unsatisfactory for its intended purpose of estimating the projective matrix given to overlapping images and determining the smallest value for the location registration error function. (*See*, col. 11, lines 51-56.)

Furthermore, the teachings of Xiong fail to teach or suggest retrieving of overlapping areas of the two digital images at a second resolution area higher than the first resolution level based on the first overlap information, as well as the identification of second overlap information at the second resolution level since Xiong is strictly limited to comparing overlapping image areas to locally pairwise register the rectilinear images. (*See* col. 10, lines 10-16.)

Accordingly, Applicant respectfully submits that the Examiner fails to establish a *prima facie* case of obviousness of Claim 17 over Xiong, since Xiong, as modified by the Examiner, fails to teach or suggest each of the above-recited features of Claim 17. Furthermore, Applicant respectfully submits that the Examiner fails to illustrate a suggestion or motivation for modifying Xiong, since the motivation suggested by the Examiner would render Xiong unsatisfactory for its intended purpose of using different combinations of overlapping areas to determine the smallest value for the local registration function. (*See*, col. 11, lines 51-56.)

Accordingly, Applicant respectfully submits that Claim 17 is patentable over Xiong, as well as the references of record. Consequently, Applicant respectfully requests that the Examiner reconsider and withdraw the §103(a) rejection of Claim 17.

Regarding Claims 22-24, Claims 22-24 depend from Claim 17, and therefore recite the patentable claim features of Claim 17, as described above. Accordingly, Claims 22-24, based on their dependency from Claim 17, are also patentable over Xiong, as well as the references of record. Consequently, Applicant respectfully requests that the Examiner reconsider and withdraw the §103(a) rejection of Claims 22-24.

Regarding Claim 27, Claim 27 depends from Claim 25, and therefore recites the patentable claim features of Claim 25, as described above. Accordingly, Claim 27, based on its dependency from Claim 25, is patentable over Xiong, as well as the references of record. Consequently, Applicant respectfully requests that the Examiner reconsider and withdraw the §103(a) rejection of Claim 27.

The Examiner has rejected Claims 2, 10 and 18 under 35 U.S.C. §103(a) as being unpatentable over Xiong in view of U.S. Patent No. 4,622,632 issued to Tanimoto et al. ("Tanimoto"). Applicant respectfully traverses this rejection.

Regarding the Examiner's citing of Tanimoto, Applicant respectfully submits that Tanimoto fails to rectify the deficiencies attributed to Xiong in failing to teach the purging of memory subsequent to identifying, as well as the retrieval of images based on the identified first overlap information at a second resolution level and further detection of second overlap information at the second resolution level. Accordingly, Applicant respectfully submits that Claims 1, 9 and 17, for at least the reasons described above, are patentable over the combination of Xiong in view of Tanimoto.

Therefore, Claims 2, 10 and 18, based on their dependency from Claims 1, 9 and 17, respectively, are also patentable over the combination of Xiong in view of Tanimoto. Consequently, Applicant respectfully requests that the Examiner reconsider and withdraw the §103(a) rejection of Claims 2, 10 and 18.

The Examiner has rejected Claims 3, 11, 19 and 26 under 35 U.S.C. §103(a) as being unpatentable over Xiong in view of U.S. Patent No. 6,075,905 issued to Herman et al. ("Herman"). Applicant respectfully traverses this rejection.

Regarding the Examiner's citing of Herman, Applicant respectfully submits that Herman fails to rectify the deficiencies attributed to Xiong in failing to teach the purging of memory subsequent to identifying, as well as the retrieval of images based on the identified first overlap information at a second resolution level and further detection of second overlap information at the

second resolution level. Accordingly, Applicant respectfully submits that Claims 1, 9, 17 and 25, for at least the reasons described above, are patentable over the combination of Xiong in view of Herman.

Therefore, Claims 3, 11, 19 and 26, based on their dependency from Claims 1, 9, 17 and 25, respectively, are also patentable over the combination of Xiong in view of Herman. Consequently, Applicant respectfully requests that the Examiner reconsider and withdraw the §103(a) rejection of Claims 3, 11, 19 and 26.

The Examiner has rejected Claims 4, 12 and 20 under 35 U.S.C. §103(a) as being unpatentable over Xiong in view of U.S. Patent No. 6,011,558 issued to Hsieh et al. ("Hsieh"). Applicant respectfully traverses this rejection.

Regarding the Examiner's citing of Hsieh, Applicant respectfully submits that Hsieh fails to rectify the deficiencies attributed to Xiong in failing to teach the purging of memory subsequent to identifying, as well as the retrieval of images based on the identified overlap information at a second resolution level and further detection of overlap information at the second resolution level. Accordingly, Applicant respectfully submits that Claims 1, 9 and 17, for at least the reasons described above, are patentable over the combination of Xiong in view of Hsieh.

Therefore, Claims 4, 12 and 20, based on their dependency from Claims 1, 9 and 17, respectively, are also patentable over the combination of Xiong in view of Hsieh. Consequently, Applicant respectfully requests that the Examiner reconsider and withdraw the §103(a) rejection of Claims 4, 12 and 20.

The Examiner has rejected Claims 5, 13 and 21 under 35 U.S.C. §103(a) as being unpatentable over Xiong in view of U.S. Patent No. 5,991,461 issued to Schmucker et al. ("Schmucker"). Applicant respectfully traverses this rejection.

Regarding the Examiner's citing of Schmucker, Applicant respectfully submits that Schmucker fails to rectify the deficiencies attributed to Xiong in failing to teach the purging of memory subsequent to identifying, as well as the retrieval of images based on the first identified overlap information at a second resolution level and further detection of second overlap information at the second resolution level. Accordingly, Applicant respectfully submits that Claims 1, 9 and 17, for at least the reasons described above, are patentable over the combination of Xiong in view of Schmucker.

Therefore, Claims 5, 13 and 21, based on their dependency from Claims 1, 9 and 17, respectively, are also patentable over the combination of Xiong in view of Schmucker. Consequently, Applicant respectfully requests that the Examiner reconsider and withdraw the §103(a) rejection of Claims 5, 13 and 21.

The Examiner has rejected Claims 28-31 under 35 U.S.C. §103(a) as being unpatentable over Xiong in view of U.S. Patent No. 5,140,314 issued to Stansfield et al. ("Stansfield"). Applicant respectfully traverses this rejection.

Regarding the Examiner's citing of Stansfield, Applicant respectfully submits that Stansfield fails to rectify the deficiencies attributed to Xiong in failing to teach the purging of memory subsequent to identifying, as well as the retrieval of images based on the identified first overlap information at a second resolution level and further detection of second overlap information at the second resolution level. Accordingly, Applicant respectfully submits that Claim 25, for at least the reasons described above, are patentable over the combination of Xiong in view of 'Stansfield.

Therefore, Claims 28-31, based on their dependency from Claim 25 are also patentable over the combination of Xiong in view of Stansfield. Consequently, Applicant respectfully requests that the Examiner reconsider and withdraw the §103(a) rejection of Claims 28–31.

CONCLUSION

Applicant has amended the claims to recite features that are not taught or suggested by the references. No new matter is introduced by the Applicant's claim amendments, which are supported in Applicant's specification and are necessary for placing the present application in condition for allowance.

In view of the foregoing, it is believed that all claims now pending, namely Claims 1-31 patentably define the present application over the prior art of record, and are therefore in condition for allowance; and such action is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207-3800, ext. 738

Respectfully submitted,

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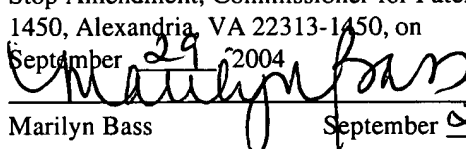Los Angeles, California 90025
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